



Figure 24

(1) Sequence of promoter CsVMV (Example 1A) (SEQ ID NO:1):

tctagaaactagcttccagaaggtaattatccaagatgtagcatcaagaatccaatgtttacgggaaaaactatggaag  
tattatgtgagctcagcaagaagcagatcaatatcgggcacatatgcaacctatgttcaaaaatgaagaatgtacagatacaagat  
cctatactgccagaatacgaagaagaatacgtagaaattgaaaaagaagaaccaggcgaagaaaagaatcttgaagacgtaag  
cactgacgacaacaatgaaaagaagaagataaggctcggtgattgtgaaagagacatagaggacacatgtaagggtggaaaatgt  
aagggcggaaagtaaccttatcacaaggaatcttatccccactacttatccttttatattttccgtgtcattttgcccttgagtttc  
ctatataaggaaccaagttcggcatttgtgaaaacaagaaaaatttggtgtaagctattttcttgaagtactgaggatacaacttca  
gagaaatttgaagtttga

Total 532 bp

(2) Sequence of zinc finger protein 2C7 binding site (Example 1A) (SEQ ID NO:2):

GCG TGG GCG GCG TGG GCG

Total 18 bp.

(3) Sequence of promoter pc7rbTATA (Example 1A) (SEQ ID NO:3):

cccgggtatataataagcttggcattccggtactgttggttaaagccacat

Total 51 bp.

(4) Sequence of pND3008 coding region (Example 1B) (SEQ ID NO:4):

agcgtgaccggctgctgccctctctagagataatgagcattgcatgtctaagttataaaaaattaccacatattttttg  
tcacacttgttgaagtgcagtttatctatctttatcacatatatttaaactttactctacgaataatataatctatagtactacaataatca  
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ttagagtcgccgaattatacatttaatacgcgatagaaaacaaatatagcgcgcaaactaggataaattatcgcgcgcggtgtca  
tctatgttactagatccgggaattgggtac

Total:	3121 bp
ZmUbi promoter:	44 bp to 2026 bp
Six finger ZFP2C7:	2060 bp to 2588 bp
Nuclear localization signal:	2620 bp to 2641 bp
VP64 activation domain:	2641 bp to 2805 bp

agcgtgacccggctgctgccccctctctagagataatgagcattgcatgtctaagtataaaaaattaccacataattttttgtg  
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ggataaattatcgcgcgcggtgtcatctatgttactagatccgggaattccggaccggtaccagcggcc

Total:	3068 bp
ZmUbi promoter:	44 bp to 2026 bp
SID repression domain:	2066 bp to 2173 bp
Nuclear localization signal:	2174 bp to 2194 bp
Six finger ZFP2C7:	2207 bp to 2735 bp
HA epitope tag:	2762 bp to 2791 bp
Nos terminator:	2820 bp to 3112 bp

(6) Sequence of 6X2C7 binding site (SEQ ID NO:6):

cgtgctagcgcgtgggcggcggtgggcgaacaagcgtgggcggcggtgggcgaacaagcgtgggcggcggtgggc  
gactagtgtagcgcgtgggcggcggtgggcgaacaagcgtgggcggcggtgggcgaacaagcgtgggcggcggtgggcgac  
tagtg

Total: 156 bp

(7) Sequence of 3 finger protein C7 (SEQ ID NO:73):

atggcccaggcgccctcgagccctatgcttgcctgtcagtcctcgatcgccgcttttctaagtcggctgatctga  
agcgccatatccgcatccacacaggccagaagccctccagtgctgaatatgcatgcgtaacttcagtcgtagtgaccaccttac  
caccacatccgcacccacacaggcgagaagccctttgcctgtgacatttggggaggaagtttgcaggagtgatgaacgcaa  
gaggcatacaaaatccatttaagacagaaggactctagaactagtgccaggccggccaggctagc

Total: 314 bp

(8) Amino acid sequence of 3 finger protein C7 (SEQ ID NO:74):

MAQAALPYACPVESCDRRFSKSADLKRHIRIHTGQKPFQCRICMRNFSR  
SDHLTTHTHTGKPFACDICGRKFARSDERKRHTKIHLRQKDSRTSGQAGQAS

Total: 105 aa

(9) Sequence of zinc finger protein ZFPap3 binding site (SEQ ID NO:7):

GAT GGA GTT GAA GAA GTA

Total: 18 bp

(10) Sequence of zinc finger protein ZFPm1 and ZFPm2 binding site m12: (SEQ ID NO:76):

GCC TCC TTC CTC CTC TCA CTC

Total: 21 bp

ZFPm1 binding site: compliment strand of 1 to 18

ZFPm2 binding site: compliment strand of 4 to 21

(11) Sequence of zinc finger protein ZFPm3 and ZFPm4 binding site m34 (SEQ ID NO:77):

GCC AAC TAC TAC GGC TCC CTC ACC

Total: 24 bp

ZFPm3 binding site: compliment strand of 1 to 18

ZFPm4 binding site: compliment strand of 7 to 24

(12) Partial sequence of pMal-m1 (1-3300 bp) and zinc finger protein ZFPm1 (2719-3270 bp) (SEQ ID NO:14):

ccgacaccatcgaatggtgcaaacctttcgcggtatggcatgatagcgcccggaagagagtcaattcagggtggt  
gaatgtgaaaccagtaacgttatacagatgtcgcagagtatccggtgtctcttatcagaccgtttcccgctggtgaaccaggcca  
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cggctctgacaatctcgtccggcâccaacgtactcacaccggtaaaaaaactagtggccaggccggccagtacccgtacgacgt  
tccggactacgt

Total: 514 bp

Primer F1-f1 of ZFPm1: 2770 bp to 2850 bp

Primer F1-f2 of ZFPm1: 2740 bp to 2790 bp

Primer F2-f of ZFPm1: 2867 bp to 2940 bp

Primer F2-b of ZFPm1: 2824 bp to 2889 bp

Primer F3-b1 ZFPm1: 2916 bp to 2973 bp

Primer F3-b2 ZFPm1: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm1: 3022 bp to 3102 bp

Primer F4-f2 of ZFPm1: 2992 bp to 3042 bp

Primer F5-f of ZFPm1: 3119 bp to 3192 bp

Primer F5-b of ZFPm1: 3076 bp to 3141 bp

Primer F6-b1 of ZFPm1: 3168 bp to 3225 bp

Primer F6-b2 of ZFPm1: 3205 bp to 3273 bp

(13) Sequence of zinc finger protein ZFPm1

(Translated from pMal-m1: 2719-3270 bp) (SEQ ID NO:75):

AQAALPGEKPYACPECGKSFSDPGHLVRHQRTHTGEKPYKCPECGKSFS  
QRAHLERHQRTHTGEKPYKCPECGKSFSQSSNLVRHQRTHTGEKPYACPECGKS  
FSRSDNLVRHQRTHTGEKPYKCPECGKSFSRSDNLVRHQRTHTGEKPYKCPECG  
KSFSQAGHLASHQRTHTGKKTSGQAG

(14) Partial sequence of pMal-m2 (1-3300 bp) and zinc finger protein ZFPm2

(2719-3270 bp) (SEQ ID NO:15):

ccgacaccatcgaatggtgcaaaaccttcgcggtatggcatgatagcgcccggaagagagtcaattcagggtggt  
gaatgtgaaaccagtaacgttatacagatgtcgcagagtatgccggtgtctcttatcagaccgttcccgcgtggtgaaccaggcca  
gccacgtttctgcgaaaacgcgggaaaaagtggaagcggcgatggcggagctgaattacattccaaccgcgtggcacaaca  
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cgcatgtccgctttctggtatccgtgcgtactgcggtgatcaacgccgccagcggtcgtcagactgtcgtatgaagccctga  
aagacgcgcagactaattcgagctcgaacaacaacaataacaataacaacaacctcgggatcgagggaaggatttcagaa  
ttcgatcctcttctctgtggcccaggcggccctcgagcccggggagaagccctatgcttgcggaatgtggtgaagtccttctc  
tcagagctctcacctggtgcgccaccagcgtaccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatcttttag  
ccagtccagcaacctggtgcgccatcaacgcactcatactggcgagaagccatacaaatgtccagaatgtggcaagtcttctct  
cggctcgacaatctcgtccggcaccaacgtactcacaccggggagaagccctatgcttgcggaatgtggtgaagtccttcagcc



gcagcgataacctggtgcgccaccagcgtagccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatcttttagc  
caggccggccacctggccagccatcaacgcactcatactggcgagaagccatacaaatgtccagaatgtggcaagtctttctct  
cggcttgacaatctcgtccggcaccaacgtactcacaccggtaaaaaaactagtggccaggccggccagtaccggtacgacgt  
tccggactacgct

Total: 514 bp

Primer F1-f1 of ZFPm2: 2770 bp to 2850 bp

Primer F1-f2 of ZFP m2: 2740 bp to 2790 bp

Primer F2-f of ZFP m2: 2867 bp to 2940 bp

Primer F2-b of ZFPm2: 2824 bp to 2889 bp

Primer F3-b1 ZFPm2: 2916 bp to 2973 bp

Primer F3-b2 ZFPm2: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm2: 3022 bp to 3102 bp

Primer F4-f2 of ZFPm2: 2992 bp to 3042 bp

Primer F5-f of ZFPm2: 3119 bp to 3192 bp

Primer F5-b of ZFPm2: 3076 bp to 3141 bp

Primer F6-b1 of ZFPm2: 3168 bp to 3225 bp

Primer F6-b2 of ZFPm2: 3205 bp to 3273 bp

- (15) Partial sequence of pMal-m3 (1-3300 bp) and zinc finger protein ZFPm3  
(2719-3270 bp) (SEQ ID NO:16):

ccgacaccatcgaatggtgcaaacctttcgcggtatggcatgatagcgcccggaagagagtcaattcagggtggt  
gaatgtgaaaccagtaacgttatacgaatgctgcagagtatgccggtgtctcttatcagaccgtttcccgcgtggtgaaccaggcca  
gccacgtttctgcgaaaacgcgggaaaaagtgaagcggcgatggcggagctgaattacattccaaccgcgtggcacaaca  
actggcgggcaaacagtcgttgctgattggcgttgccacctcagctctggccctgcacgcgccgtcgaaattgtcgcggcgat  
taaatctcgcgccgatcaactgggtgccagcgtggtggtgctgatgtagaacgaagcggcgctgaagcctgtaaagcggcg  
gtgcacaatcttctcgcgcaacgcgtcagtggtgatcattaactatccgctggatgaccaggatgccattgctgtggaagctg  
cctgcactaatgttccggcggtatttcttgatgtctctgaccagacacccatcaacagtatttttcccatgaagacggtacgcga  
ctgggcgtggagcatctggtcgcattgggtcaccagcaaatcgcgctgttagcggggccattaagtctgtctcggcgcgctctgc  
gtctggtggtggcataaatatctcactcgcaatcaaatcagccgatagcggaacgggaaggcgactggagtgccatgtccg  
gtttcaacaacatgcaaatgctgaatgagggcatcgttccactgcgatgctggttgccaacgatcagatggcgctgggcgc

aatgcgcgccattaccgagtcgggctgcgcgttggtcggatatctcggtagtgggatacgacgataccgaagacagctcat  
gttatatcccgccgtaaccacatcaaacaggatttcgcctgctggggcaaaccagcgtggaccgcttgcgcaactctctcag  
ggccaggcgggtgaagggaatcagctgttgcctcactggtgaaaagaaaaaccacctggcgcccaatcgcgcaaacg  
cctctccccgcgcgttggccgattcattaatgcagctggcacgacaggttcccgactggaaagcgggcagtgagcgcaacgc  
aattaatgtgagttagctcactcattaggcacaattctcatgtttgacagcttatcatcgactgcacggtgcaccaatgcttctggcgt  
caggcagccatcggaagctgtggtatggctgtgcaggtcgtaaactcactgcataattcggtgcgctcaaggcgactccccgttct  
ggataatgtttttgcgccgacatcataacggttctggcaaatattctgaaatgagctgttgacaattaatcatcggtcgtataatgt  
gtggaattgtgagcggataacaattcacacaggaaacagccagtcggttaggtgttttcacgagcacttcaccaacaaggacc  
atagattatgaaaactgaagaaggtaaactggaatctggattaacggcgataaaggctataacgggtctcgctgaagtcggtgaag  
aaattcgagaaagataccggaattaaagtcaccgttgagcatccggataaactggaagagaaattccacaggttgccgcaact  
ggcgatggccctgacattatcttctgggcacacgaccgcttgggtggctacgctcaatctggcctgttggctgaaatcacccgg  
acaaagcgttcaggacaagctgtatccgtttacctgggatgccgtacgttacaacggcaagctgattgcttaccgatcgctgtt  
gaagcgttatcgctgatttataacaaagatctgctgccgaaccgccaaaaacctgggaagagatcccgcgctggataaagaa  
ctgaaagcgaaaggtaagagcgcgctgatgttcaacctgcaagaaccgtactcacctggccgctgattgctgctgacgggggt  
tatgcgttcaagtatgaaaacggcaagtacgacattaaagacgtggcggtgataacgctggcgcgaaagcgggtctgaccttca  
ctggttgacctgattaaaaacaacacatgaatgcagacaccgattactccatcgagaagctgccttaataaaggcgaaacag  
cgatgaccatcaacggcccggtggcatggtccaacatcgacaccagcaaaagtgattatggtgtaacggtactgccgaccttca  
agggtaacatccaacccgttctgtggcggtgctgagcgaggtattaacgccgccagtcggaacaaagagctggcaaaaga  
gttctctgaaaactatctgctgactgatgaaggctctggaagcggtaataaagacaaaccgctgggtgccgtagcgctgaagtct  
tacgaggaagagttggcgaaagatccacgtattgccgccaccatggaaaacgccagaaagggtgaatcatgccgaacatcc  
cgcatggtccgcttctgtgtatgccgtgcgtactgcggtgatcaacgccgccagcggtcgtcagactgtcgatgaagccctga  
aagacgcgcgactaattcgagctgaacaacaacaataacaataacaacaacctcgggatcgagggaaggatttcagaa  
ttcggatcctcttctctgttggccaggcggccctcgagcccggggagaagccctatgcttgcggaatgtggtgaagtccttca  
gcgatcctggccacctggttgcgccaccagcgtacccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatctttta  
gcaccagcgggtccctggtgcgccatcaacgcactcactaggcgagaagccatacaaatgtccagaatgtggcaagtctttca  
gccagagctccagcctggtgcgccaccaacgtactcacaccggggagaagccctatgcttgcggaatgtggtgaagtccttca  
gccagagcagctccctggtgcgccaccagcgtacccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatctttt  
agtgactgccgcgaccttgcctcatcaacgcactcactaggcgagaagccatacaaatgtccagaatgtggcaagtctttct  
cccaatccagccatctcgtccggcaccaacgtactcacaccggtaaaaaactagtggccaggccggccagtagccgtacgac  
gttccgactacgct

Total: 514 bp

Primer F1-f1 of ZFPm3: 2770 bp to 2850 bp

Primer F1-f2 of ZFP m3: 2740 bp to 2790 bp

Primer F2-f of ZFP m3: 2867 bp to 2940 bp

Primer F2-b of ZFPm3: 2824 bp to 2889 bp

Primer F3-b1 ZFPm3: 2916 bp to 2973 bp

Primer F3-b2 ZFPm3: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm3: 3022 bp to 3102 bp

Primer F4-f2 of ZFPm3: 2992 bp to 3042 bp

Primer F5-f of ZFPm3: 3119 bp to 3192 bp

Primer F5-b of ZFPm3: 3076 bp to 3141 bp

Primer F6-b1 of ZFPm3: 3168 bp to 3225 bp

Primer F6-b2 of ZFPm3: 3205 bp to 3273 bp

(16) Partial sequence of pMal-m4 (1-3300 bp) and zinc finger protein ZFPm4

(2719-3270 bp) (SEQ ID NO:17):

ccgacaccatcgaatggtgcaaaaccttgcggtatggcatgatagcgccggaagagagtcaattcagggtggt  
gaatgtgaaaccagtaacgttatcagatgtcgcagagtatgccggtgtctcttatcagaccgtttccgcgtggtgaaccaggcca  
gccacgtttctgcgaaaacgcgggaaaaagtgggaagcggcgatggcggagctgaattacattccaaccgcgtggcacaaca  
actggcggggcaaacagtcgttgctgattggcgttgccacctccagctcgtggccctgcacgcgccgtcgcaaattgtcgcggcgat  
taaatctcgcgccgatcaactgggtgccagcgtgggtgtcgcgatggtagaacgaagcggcgctgaagcctgtaaagcggcg  
gtgcacaattctctcgcgaacgcgtcagtggtgatcattaactatccgctggatgaccaggatgccattgctgtggaagctg  
cctgcactaatgttccggcggtatttcttgatgtctctgaccagacacccatcaacagtatttttctcccatgaagacggtacgga  
ctgggcgtggagcatctggctgcattgggtcaccagcaaactcgcgtgttagcgggcccattaagttctgtctcggcgctctgc  
gtctggctggctggcataaatactcactcgaatcaaattcagccgatagcggaacgggaaggcgactggagtgccatgtccg  
gttttcaacaaccatgcaaatgctgaatgagggcatcgttccactgcgatgctggttgccaacgatcagatggcgctgggcgc  
aatgcgcgccattaccgagtcgggctgcgcgttggtgcggatatctcggtagtgggatacgacgataccgaagacagctcat  
gttatatcccgccgttaaccaccatcaaacaggattttgcctgctggggcaaaccagcgtggaccgctgtgcaactctctcag  
ggccaggcgggtgaagggaatcagctgttgccgtctcactgggtgaaaagaaaaaccacctggcgcccaatacgcgaaccg  
cctctccccgcgcttgccgattcattaatgcagctggcacgacaggtttccgactggaaagcgggcagtgagcgcaacgc  
aattaatgtgagttagctcactcattaggcacaattctcatgtttgacagcttatcatcgactgcacggtgcaccaatgcttctggcgt

caggcagccatcggaagctgtggtatggctgtgcaggtcgtaaactcactgcataattcgtgtcgtcaaggcgactcccgttct  
ggataatgtttttgcgccgacatcataacggttctggcaaatattctgaaatgagctgttgacaattaatcatcggtcgtataatgt  
gtggaattgtgagcggataacaattcacacaggaaacagccagtcctgttaggtgttttcacgagcacttcaccaacaaggacc  
atagattatgaaaactgaagaaggtaaactggtaatctggattaacggcgataaaggctataacggctcgtgaagtcggttaag  
aaattcgagaaagataccggaattaaagtcaccgttgagcatccggataaactggaagagaaattcccacaggttgccggaact  
ggcgatggccctgacattatcttctgggcacacgaccgcttgggtggctacgtcaatctggcctgttggtgaaatcaccgccg  
acaaagcgttcaggacaagctgtatccgtttacctgggatgccgtacgttacaacggcaagctgattgcttaccgatcgtgtt  
gaagcgttatcgtgattataacaaagatctgctgccgaacccgccaaaaacctgggaagagatccggcgctggataaagaa  
ctgaaagcgaaaggttaagagcgcgctgatgttcaacctgcaagaaccttacctggccgctgattgctgctgacgggggt  
tatgcgttcaagtatgaaaacggcaagtacgacattaaagacgtggcgctggataacgctggcgcgaaagcgggtctgaccttc  
ctggttgacctgattaaaaacaacacatgaatgcagacaccgattactccatcgagaagctgccittataaaggcgaaacag  
cgatgacctcaacggcccgtggcgatggtccaacatcgacaccagcaaagtgaattatggtgaacggtactgccgacctca  
agggtcaacctccaacccgttcgttggcgctgctgagcgcaggtattaacgccgccagtcgcaacaagagctggcaaaaga  
gttctcgaaaactatctgctgactgatgaaggctggaagcggtaataaagacaaaccgctgggtgccgtagcgcgtgaagtct  
tacgaggaagagttggcgaaagatccacgtattgccgccaccatggaaaacgccagaaaggtgaatcatgccgaacatcc  
cgcatgtccgcttcttggtatgccgtgcgtactgcggtgatcaacgccagcggtcgtcagactgtcgtgaagccctga  
aagacgcgcagactaattcgagctcgaacaacaacaataacaataacaacacctgggatcgaggaaggatttcagaa  
ttcgatcctcttctctgtggcccaggcggccctcgagcccggggagaagccctatgcttgcggaatgtggttaagtccttca  
ggcagagcagctccctggtgcgccaccagcgtaccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatctttt  
agccagagcagcagcctggtgcgccatcaacgcactcatactggcgagaagccatacaaatgtccagaatgtggcaagtcttctc  
agtgattgtcgtgatcttgcgaggcaccaacgtactcacaccggggagaagccctatgcttgcggaatgtggttaagtccttctc  
tcagagctctcacctggtgcgccaccagcgtaccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatcttttag  
ccgcagcgataacctggtgcgccatcaacgcactcatactggcgagaagccatacaaatgtccagaatgtggcaagtcttctca  
acttcaggccatttggctccgtcaccaacgtactcacaccggtaaaaaaactagtggccaggccggccagttaccgtacgacgtt  
ccggactacgct

Total: 514 bp

Primer F1-f1 of ZFPm4: 2770 bp to 2850 bp

Primer F1-f2 of ZFPm4: 2740 bp to 2790 bp

Primer F2-f of ZFPm4: 2867 bp to 2940 bp

Primer F2-b of ZFPm4: 2824 bp to 2889 bp

Primer F3-b1 ZFPm4: 2916 bp to 2973 bp

Primer F3-b2 ZFPm4: 2953 bp to 3021 bp

Primer F4-f1 of ZFPm4: 3022 bp to 3102 bp

Primer F4-f2 of ZFPm4: 2992 bp to 3042 bp

Primer F5-f of ZFPm4: 3119 bp to 3192 bp

Primer F5-b of ZFPm4: 3076 bp to 3141 bp

Primer F6-b1 of ZFPm4: 3168 bp to 3225 bp

Primer F6-b2 of ZFPm4: 3205 bp to 3273 bp

(17) Partial sequence of pMal-Ap3 (1-3300 bp) and zinc finger protein ZFPAp3  
(2719-3270 bp) (SEQ ID NO:18):

ccgacaccatcgaatgggtgcaaaaccttgcggtatggcatgatagcgcccggaagagagtcaattcagggtggt  
gaatgtgaaaccagtaacgttatacagatgtcgcagagtatgccggtgtcttcatcagaccgtttcccgctgggtgaaccaggcca  
gccacgtttctgcgaaaacgcgggaaaaagtgaagcggcgatggcggagctgaattacattccaaccgcgtggcacaaca  
actggcggggcaaacagtcgttgctgattggcgttgccacctccagtctggccctgcacgcgccgtcgaaattgtcgcggcgat  
taaatctcgcgccgatcaactgggtgccagcgtgggtgtcgtatgtagaacgaagcggcgctgaagcctgtaaagcggcg  
gtgcacaatcttctcgcgaacgcgtcagtggtgatcattaactatccgctggatgaccaggatgccattgctgtggaagctg  
cctgcactaatgttccggcgttatttcttgatgtcttgaccagacacccatcaacagtatttttctcccatgaagacggtacgcga  
ctgggcgtggagcatctggctgcattgggtcaccagcaaatcgcgctgttagcgggccattaagtctgtctcggcgcgctctgc  
gtctggtggtggcataaatactcactcgcaatcaaattcagccgatagcggaaacgggaaggcgactggagtgccatgtccg  
gtttcaacaacatgcaaatgctgaatgagggcacgttccactgcgatgctggttgccaacgatcagatggcgctgggcgc  
aatgcgcgccattaccgagtcgggctgcgcgttggtgcggatatctcggtagtgggatacgacgataccgaagacagctcat  
gttatatcccgccgttaaccacatcaaacaggatttgcctgctggggcaaacagcgtggaccgcttgctgcaactctctcag  
ggccaggcgggtgaagggaatcagctgttgccgctcactggtgaaaagaaaaaccacctggcgcccaatacgcaaacg  
cctctccccgcgcttgccgattcattaatgcagctggcacgacaggttcccactggaaagcgggcagtgagcgcaacgc  
aattaatgtgagttagctcactcattaggcacaattctcatgttgacagcttatcatcgactgcacggtgcaccaatgcttctggcgt  
caggcagccatcggaagctgtggtatggctgtgcaggtcgtaaatcactgcataattcgtgtcgtcaaggcgcactcccgttct  
ggataatgtttttgcgccgacatcataacggttctggcaaatattctgaaatgagctgttgacaattaatcatcggtcgtataatgt  
gtggaattgtgagcggataacaatttcacacaggaaacagccagtcggttaggtgtttcacgagcacttcaccaacaaggacc  
atagattatgaaaactgaagaaggtaaactggtaatctggattaacggcgataaaggctataacggtctcgctgaagtcggtaag  
aaattcgagaaagataaccggaattaaagtcaccgttgagcatccggataaactggaagagaaattcccacaggttgccgcaact

ggcgatggccctgacattatcttctgggcacacgaccgcttgggtggctacgctcaatctggcctgttggtgaaatcaccccg  
acaaagcgttccaggacaagctgtatccgtttacctgggatgccgtacgttacaacggcaagctgattgcttaccgatcgtgtt  
gaagcgttatcgtgattataacaaagatctgtgccgaacccgccaaaacctgggaagagatcccgcgctggataaagaa  
ctgaaagcgaaaggtgaagagcgcgctgatgttcaacctgcaagaacctgacttcacctggccgctgattgctgctgacgggggt  
tatgcttcaagtatgaaaacggcaagtacgacattaaagacgtggcgctggataacgctggcggaagcggtctgaccttc  
ctggttgacctgattaaaaacacacatgaatgcagacaccgattactccatcgagaagctgcctttaataaaggcgaaacag  
cgatgacctcaacggcccggtgggcatggtccaacatcgacaccagcaaagtgaattatggtgtaacggtactgccgacctca  
aggttcaacctcaaaccgttcgttggcgctgctgagcgcaggtattaacgccgccagtcgaacaaagagctggcaaaaga  
gttctctgaaaactatctgtgactgatgaaggctctggaagcgggttaataaagacaaaaccgctgggtgccgtagcgtgaagtct  
tacgaggaagagttggcgaaagatccacgtattgccgccaccatggaaaacgccagaaaggtgaaatcatgccgaacatcc  
cgcagatgtccgctttctggtatgccgtgctgactgcggtgatcaacgccgccagcggctcgcagactgtcgatgaagccctga  
aagacgcgcagactaattcgagctcgaacaacaacaataacaataacaacacctcgggatcgagggaaggatttcagaa  
ttcggatcctcttctctgtggcccaggcggccctcgagcccggggagaagccctatgcttgcggaatgtggttaagtccttca  
gccagagcagctccctggtgcgccaccagcgtaccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatctttt  
agccagtccagcaacctggtgcgccatcaacgcactcatactggcgagaagccatacaaatgtccagaatgtggcaagtctttc  
agccagtccagcaacctggtgcgccaccaacgtactcacaccggggagaagccctatgcttgcggaatgtggttaagtccttc  
agcaccagtggctccttggttagacaccagcgtaccacacgggtgaaaaaccgtataaatgccagagtgcggcaaatctttt  
agccagcgcgcccacctggaacgccatcaacgcactcatactggcgagaagccatacaaatgtccagaatgtggcaagtcttt  
ctcaactcaggcaacttggtccgtcaccaacgtactcacaccggtaaaaaactagtggccaggccggccagtagccgtacga  
cgttccggactacgt

Total: 514 bp

Primer F1-f1 of ZFPAp3: 2770 bp to 2850 bp

Primer F1-f2 of ZFPAp3: 2740 bp to 2790 bp

Primer F2-f of ZFPAp3: 2867 bp to 2940 bp

Primer F2-b of ZFPAp3: 2824 bp to 2889 bp

Primer F3-b1 ZFPAp3: 2916 bp to 2973 bp

Primer F3-b2 ZFPAp3: 2953 bp to 3021 bp

Primer F4-f1 of ZFPAp3: 3022 bp to 3102 bp

Primer F4-f2 of ZFPAp3: 2992 bp to 3042 bp

Primer F5-f of ZFPAp3: 3119 bp to 3192 bp

Primer F5-b of ZFPAp3: 3076 bp to 3141 bp

Primer F6-b1 of ZFPAp3: 3168 bp to 3225 bp

Primer F6-b2 of ZFPAp3: 3205 bp to 3273 bp

(18) Sequence of oligo m12 (SEQ ID NO:19):

Biotin-GGa gcc tcc ttc ctc ctc tca ctc GGG TTTT CCC gag tga gag gag gaa gga  
ggc tCC

Total: 58 bp

Lower case sequence: ZFPm1 and ZFPm2 binding site m12

(19) Sequence of oligo m34 (SEQ ID NO:20):

Biotin-GGa gcc aac tac tac ggc tcc ctc acc GGG TTTT CCC ggt gag gga gcc gta  
gta gtt ggc tCC

Total: 58 bp

Lower case sequence: ZFPm3 and ZFPm4 binding site m34

(20) Sequence of oligo Ap3 (SEQ ID NO:21):

Biotin-GGt tac ttc ttc aac tcc atc GGG TTTT CCC gat gga gtt gaa gaa gta aCC

Total: 52 bp

Lower case sequence: ZFPAp3 binding site

(21) Sequence of oligo NRI-1 (SEQ ID NO:22):

Biotin-GG ttc tac ccc tcc cac cgc GGG TTTT CCC gcg gtg gga ggg gta gaa CC

Total: 51 bp

(22) Sequence of oligo NRI-2 (SEQ ID NO:23):

Biotin-GG tgc ggc gac tgc agc agc GGG TTTT CCC gct gct gca gtc gcc gca CC

Total: 51 bp

(23) Sequence of oligo hHD-I (SEQ ID NO:24):

Biotin-GG ggc ccc gcc tcc gcc ggc GGG TTTT CCC gcc ggc gga ggc ggg gcc  
CC

Total: 51 bp

(24) Sequence of oligo hHD-II (SEQ ID NO:25):

Biotin-GG ggc agc ccc cac ggc gcc GGG TTTT CCC ggc gcc gtg ggg gct gcc CC

Total: 51 bp

(25) Sequence of oligo c5p1-g (SEQ ID NO:26):

Biotin-GG gac acc ccc aac ccc gcc GGG TTTT CCC ggc ggg gtt ggg ggt gtc CC

Total: 51 bp

(26) Sequence of oligo c5p3-g (SEQ ID NO:27):

Biotin-GG ctc tgc tca tcc cac tac GGG TTTT CCC gta gtg gga tga gca gag CC

Total: 51 bp

(27) Sequence of oligo B3c2 (SEQ ID NO:28):

Biotin-GG acc cac cgc gtc ccc tcc GGG TTTT CCC gga ggg gac gcg gtg ggt CC

Total: 51 bp

(28) Sequence of oligo e2c-g (SEQ ID NO:29):

Biotin-GG cac tgc ggc tcc ggc ccc GGG TTTT CCC ggg gcc gga gcc gca gtg CC

Total: 51 bp

(29) Sequence of primer Ap3-F (SEQ ID NO:30):

GGCGAGAGGGAAGATCCAG

Total: 19 bp

(30) Sequence of primer NZlib5' (SEQ ID NO:31):

GGCCCAGGCGGCCCTCGAGC

Total: 20 bp

(31) Sequence of primer Ap3f4-R (SEQ ID NO:32):



CTCCTCTAATACGACTCACTATAGGGACACTCACCTAGCCTCTG

Total: 44 bp

(32) Sequence of primer m4f3-R (SEQ ID NO:33):

CCTCGCAAGATCACGACAATC

Total: 21 bp

(33) Sequence of quantitative PCR probe for AP3 (SEQ ID NO:34):

CCATTTCATCCTCAAGACGACGCAGCT

Total: 27 bp

(34) Sequence of quantitative PCR primer for AP3 (Forward) (SEQ ID NO:35):

TTTGGACGAGCTTGACATTGAC

Total: 22 bp

(35) Sequence of quantitative PCR primer for AP3 (Reverse) (SEQ ID NO:36):

CGCGAACGAGTTTGAAAGTG

Total: 20 bp

(36) Sequence of 2C7-SID (Figure 3) (SEQ ID NO:66):

gacggatcgggagatctcccgatcccatatggctgactctcagtacaatctgctctgatgccgatagtaagccagta  
tctgctccctgcttggtgaggtcgctgagtagtgccgagcaaaatttaagctacaacaaggcaaggcttgaccgacaatt  
gcatgaagaatctgcttagggtaggcgttttgcgctgcttcgcatgtacgggccagatatacgcgttgacattgattgacta  
gttattaatagtaataattacgggggtcattagttcatagcccatatattggagttccgcgttacataacttacggtaaattggccgcct  
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